

## NEW FLORISTIC RECORDS FROM CENTRAL TURKEY (ESKIŞEHİR)

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**ABSTRACT.** 111 species are listed which are new records for the province of Eskişehir in western central Turkey. They are published as new grid square records using the system adopted in Davis's *Flora of Turkey*; they belong to the families dealt with in the first four volumes of the *Flora*. 10 species, in addition, are listed as new square records from eastern Turkey.

The plants listed in this paper were mostly collected by the author from Sündiken Dağları, a range in the northern part of Turkey's Eskişehir province which is a meeting place of Turkey's three phytogeographical regions: Euro-Siberian (Euxine province), Mediterranean and Irano-Turanian. This range, which runs from east to west and reaches 1768 m (Sündiken tepesi), is bounded to the north and east by the middle reaches of the Sakarya river, in the west by Bozdağ and to the south by the Eskişehir plain. The northern boundary is at 250–400 m, the southern one at 1000 m. The annual precipitation varies from 350–600 mm, depending on altitude and aspect. As the prevailing wind is westerly, the eastern and southern slopes have less rain than those facing north and west. Snow usually lies in winter above 1000 m.

Three main vegetation types can be distinguished in the Sündiken Dağları: 1. Steppic vegetation, from 1000 to 1200 m on the southern and eastern slopes. Leading species include *Astragalus microcephalus*, *Genista sessilifolia* and *Artemisia* spp.

2. Luxuriant conifer forests on the northern slopes, including *Pinus brutia* (up to 700 m), *P. nigra* subsp. *pallasiana* (1200–1400 m) and *P. sylvestris* (1400 m to the summit ridge).

3. A deciduous forest belt, from 800–1200 m on the northern slopes (between the *Pinus brutia* and *P. nigra* belts) and western slopes. Leading trees include *Quercus dschorochensis*, *Q. cerris* and *Q. pubescens*. Southern and eastern slopes often support *Juniperus excelsa* and *J. oxycedrus*. However, the Sakarya valley has a truly Mediterranean climate. Typical Mediterranean plants such as *Pinus brutia*, *Cistus creticus* and *Phillyrea latifolia* are native in the area; olives and cotton are cultivated.

My collection, totalling about 600 gatherings, was made between 1970 and 1974 while studying the ecology and phytosociology of the Sündiken Dağları. Most of this area falls within B3 of the grid system adopted in Davis's *Flora of Turkey*, except for the Sakarya valley which is in A3. Until recently Eskişehir has been one of the least botanized provinces in Anatolia. The 111 species listed here from this province are all believed to be new square records for A3 or B3 and cover the families treated in volumes I–IV of the *Flora*. A few uncritical species are listed from the Sündiken mountains without specimens being cited; these were observed in the field by the author. Three other new records from this area have already been published

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by Dr A. Huber-Morath (1973), to whom I sent some material for identification; these are *Thalictrum lucidum* L. (Ekim 212), *Erodium absinthoides* Willd. subsp. *absinthoides* (Ekim 216) and *Acer tataricum* L. (Ekim 215).

In addition to the Eskişehir records, ten species, all collected by M. Zel (of Diyarbakir), are recorded for the first time from B7, B8, C7 and C8 in eastern Anatolia.

In order to ensure that the records listed below were new for the grid squares cited, the following floristic works (among others), published after the first 4 volumes of the Flora, were consulted: Akman (1974), Dudley (1965), Huber-Morath (1973) and Sorger (1971).

The collections were recently identified at the Royal Botanic Garden, Edinburgh, during a study period as a post-doctoral fellow of the Department of Botany, University of Edinburgh. I am indebted to Dr P. H. Davis for valuable help and advice and to various colleagues for their assistance in identifying specimens.

The list follows the sequence of families, genera and species adopted in the *Flora of Turkey* volumes I-IV. The figures in square brackets after the species name refer to the volume and page number in the Flora. Specimens are deposited in the herbarium of the Royal Botanic Garden, Edinburgh (E) and in the herbarium of the Department of Botany, University of Ankara (ANK). The accompanying map (fig. 1) shows some of the frequently cited localities.

#### EPHEDRACEAE

*Ephedra major* Host [1:85]

A3 Eskişehir: Sariyer dam, 400 m, 30 v 1970, Ekim 478.

#### RANUNCULACEAE

*Anemone coronaria* L. [1:136]

B3 Eskişehir: Sündiken Da., 5 km N of Mihalıççık, 1300 m, 27 iii 1971, Ekim 762.

This record is from an exceptionally high altitude for this species.

*Clematis cirrhosa* L. [1:140]

A3 Eskişehir: Gökçekaya dam, dry stream, 350 m, 26 iii 1971, Ekim 764.

A climbing shrub, interesting as an indicator of Mediterranean climate.

*Ranunculus brutius* Ten. [1:156]

B3 Eskişehir: Sündiken Da., Bahçekuyu, 1450 m, 22 vi 1971, Ekim 755.

*R. arvensis* L. [1:189]

B3 Eskişehir: Sündiken Da., common in steppe and as a segetal, 1000 m, Ekim 758.

#### PAEONIACEAE

*Paeonia peregrina* Miller [1:204]

A3 and B3 Eskişehir: Sündiken Da., 500-1500 m, 21 vi 1973, Ekim 707.



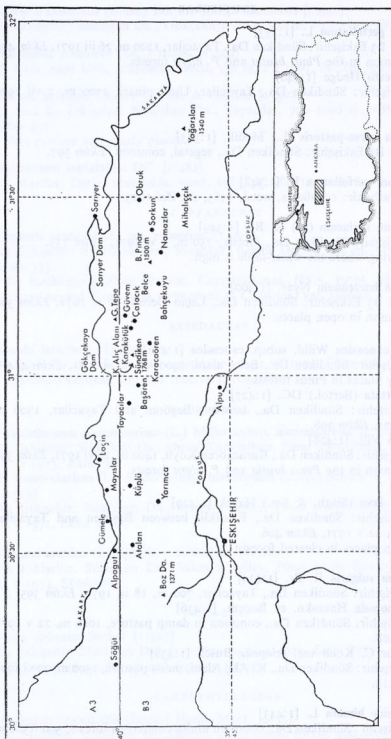


FIG. 1. Map of the Sündiken mountain range to show some of the localities cited in the text.



## CRUCIFERAE

**Thlaspi perfoliatum** L. [1:333]

A<sub>3</sub> and B<sub>3</sub> Eskişehir: Sündiken Da., Tayacilar, 1200 m, 26 iii 1971, *Ekim* 413.

Common in the *Pinus brutia* and *P. nigra* forests.

**T. jaubertii** Hedge [1:340]

B<sub>3</sub> Eskişehir: Sündiken Da., Tayacilar, Uşak pinari, 1300 m, 2 vii 1970, *Ekim* 391.

**Capsella bursa-pastoris** (L.) Medik. [1:343]

A<sub>3</sub> and B<sub>3</sub> Eskişehir: Sündiken Da., segetal, common, *Ekim* 397.

**Myagrum perfoliatum** L. [1:348]

C8 Diyarbakir: cornfields, weed, 1965, *M. Zel* 1005.

**Euclidium syriacum** (L.) R. Br. [1:349]

B<sub>3</sub> Eskişehir: Sündiken Da., Obruk, 750 m, 8 vi 1971, *Ekim* 733.

Growing where the water-table is high.

**Alyssum borzeanum** Nyár. [1:400]

A<sub>3</sub> and B<sub>3</sub> Eskişehir: Sündiken Da., Laçın Deresi, 12 vi 1971, *Ekim* 394.

Common in open places.

**Arabis caucasica** Willd. subsp. *caucasica* [1:426]

B<sub>3</sub> Eskişehir: Sündiken Da., Belce alani, 1400 m, 11 vi 1971, *Ekim* 414.

Stony places in *Pinus* forests.

**A. sagittata** (Bertol.) DC. [1:427]

B<sub>3</sub> Eskişehir: Sündiken Da., between Başören and Tayacilar, 1300 m, 23 v 1971, *Ekim* 396.

**A. nova** Vill. [1:428]

B<sub>3</sub> Eskişehir: Sündiken Da., Karacaören Koyu, 1400 m, 26 vi 1971, *Ekim* 390.

Common in the *Pinus brutia* and *P. nigra* forests.

**Turritis laxa** (Sibth. & Sm.) Hayek [1:429]

B<sub>3</sub> Eskişehir: Sündiken Da., Findikli, between Başören and Tayacilar, 1000 m, 22 v 1971, *Ekim* 406.

Damp places in cleared forests.

**Barbarea vulgaris** R. Br. [1:434]

A<sub>3</sub> Eskişehir: Sündiken Da., Tayacilar, 700 m, 18 iii 1973, *Ekim* 395.

**B. trichopoda** Hausskn. ex Bornm. [1:436]

B<sub>3</sub> Eskişehir: Sündiken Da., common in damp pasture, 1000 m, 22 v 1971, *Ekim* 408.

**B. minor** C. Koch var. *eriopoda* Busch [1:438]

B<sub>3</sub> Eskişehir: Sündiken Da., K. Aliç Alani, moist pasture, 1500 m, 20 vi 1973, *Ekim* 415.

**Cardamine hirsuta** L. [1:443]

B<sub>3</sub> Eskişehir: Sündiken Da., common under coniferous forests, 500–1500 m, 26 iii 1971, *Ekim* 405.



**Aubrieta canescens** (Boiss.) Bornm. subsp. **canescens** [1:446]  
A3 Eskişehir: Sündiken Da., Gökçekaya dam, 500 m, 19 v 1971, *Ekim* 411.

**Malcolmia crenulata** (DC.) Boiss. [1:462]  
C7 Urfa: near Urfa, cornfields, weed, 550 m, 7 v 1967, *M. Zel* 1037.

**Alliaria petiolata** (Bieb.) Cavara & Grande [1:480]  
A3 and B3 Eskişehir: Sündiken Da., Tayacilar, 700–1000 m, 18 v 1971, *Ekim* 417.

Wet pasture and shady places.

**Sisymbrium septulatum** DC. [1:484]  
C8 Mardin: Derik, cornfields, weed, 1965, *M. Zel* 1037.

#### CAPPARACEAE

**Capparis ovata** Desf. var. **canescens** [1:497]  
A3 Eskişehir: Sündiken Da., Mayislar, Küplü Deresi, 600 m, 5 vi 1971, *Ekim* 373.

In Rechinger's *Flora Iranica*, Capparidaceae (68:5, 1970), Hedge & Lamond regard *C. ovata* as a synonym of *C. spinosa* var. *spinosa*.

#### RESEDACEAE

**Reseda luteola** L. [1:505]  
B3 Eskişehir: Sündiken Da., segetal, 900 m, 2 vii 1970, *Ekim* 748.  
Common between 500 and 1000 m at roadsides.

#### CISTACEAE

**Helianthemum nummularium** (L.) Miller subsp. **nummularium** [1:512]  
B3 Eskişehir: Sündiken Da., above Karacaören, *Pinus nigra* forest, 1400 m, 19 vi 1973, *Ekim* 378.

**H. nummularium** (L.) Miller subsp. **tomentosum** (Scop.) Schinz & Thellung [1:513]

A3 Eskişehir: Sündiken Da., Sakarya valley, *Pinus brutia* forest, 350 m, 18 v 1971, *Ekim* 377.

**Fumana arabica** (L.) Spach var. **arabica** [1:518]  
A3 Eskişehir: Sündiken Da., Sakarya valley, *Pinus brutia* forest, 500 m, 22 v 1974, *Ekim* 928.

#### VIOLACEAE

**Viola sieheana** Becker [1:527]  
B3 Eskişehir: Sündiken Da., 800–1600 m, 20 v 1970, *Ekim* 873.  
Common in coniferous and *Quercus* forests.

#### CARYOPHYLLACEAE

**Minuartia intermedia** (Boiss.) Hand.-Mazz. [2:55]  
A3 Eskişehir: Sündiken Da., Küplü, *Pinus brutia* forest, 400–500 m, 22 vi 1974, *Ekim* 929.



**Moehringia trinerva** (L.) Clairv. [2:68]

B<sub>3</sub> Eskişehir: Sündiken Da., Karakütük, Guvem pasture, 1300 m, 1 vii 1970, *Ekim* 355.

**Cerastium fragillimum** Boiss. [2:84]

B<sub>3</sub> Eskişehir: Sündiken Da., Çatacik, coniferous forest, 1300 m, 10 vi 1971, *Ekim* 377.

**Moenchia mantica** (L.) Bartl. subsp. **mantica** [2:88]

B<sub>3</sub> Eskişehir: Turkmen Da., Kalabak Deresi, 1400–1600 m, 12 vi 1971, *Ekim* 335.

*Fagus orientalis* and *Pinus sylvestris* grow on this mountain, Turkmen Da., which is S of Eskişehir.

**Dianthus zonatus** Fenzl var. **hypochlorus** (Boiss. & Heldr.) Reeve [2:128]

B<sub>3</sub> Eskişehir: Sündiken Da., Tayacilar, 1350 m, 2 vii 1970, *Ekim* 350.

**D. calocephalus** Boiss. [2:129]

B<sub>3</sub> Eskişehir: Sündiken Da., Karacaören forest plantation area, 1300 m, 1 vii 1970, *Ekim* 354.

From the same locality another specimen was collected which is closely allied to *D. calocephalus* but has yellow petals, *Ekim* 354/A.

**Silene italica** (L.) Pers. [2:192]

B<sub>3</sub> Eskişehir: Sündiken Da., Karakütük, 1600 m, 30 vi 1970, *Ekim* 345.

Common in the *Pinus nigra* and *P. sylvestris* forests.

**S. marshallii** C.A. Meyer [2:194]

C<sub>7</sub> Urfa: near Urfa, cornfields, weed, *M. Zel* 1001.

**S. spergulifolia** (Desf.) Bieb. [2:206]

B<sub>3</sub> Eskişehir: Sündiken Da., steppe, 1000 m, 15 vii 1971, *Ekim* 343.

#### POLYGONACEAE

**Rumex acetosella** L. [2:284]

B<sub>3</sub> Eskişehir: Sündiken Da., common, 20 vi 1973, *Ekim* 740.

**R. tuberosus** L. subsp. **tuberosus** [2:285]

B<sub>3</sub> Eskişehir: Sündiken Da., Uşak Pinari, between Basören-Tayacilar, *Quercus* forest, 1000 m, 23 v 1971, *Ekim* 734.

**R. crispus** L. [2:289]

B<sub>3</sub> Eskişehir: Sündiken Da., Basören, 1350 m, 18 v 1971, *Ekim* 735.

#### GUTTIFERAE

**Hypericum confertum** Choisy subsp. **confertum** [2: 381]

B<sub>3</sub> Eskişehir: Sündiken Da., Karakütük, 1700 m, 30 vi 1970, *Ekim* 528.

**H. aviculariifolium** Jaub. & Spach subsp. **aviculariifolium** var. **aviculariifolium** [2:397]

A<sub>3</sub> Eskişehir: Sündiken Da., Sakarya valley and Atalan tekke, 500–1000 m, 26 vi 1974, *Ekim* 530 and 911.

Common in *Pinus brutia* forest and steppe.



## MALVACEAE

*Althea hirsuta* L. [2:420]

C8 Mardin: Silopi, cornfields, 600 m, 10 v 1967, *M. Zel* 1039.

## TILIACEAE

*Tilia rubra* DC. subsp. *caucasica* (Rupr.) V. Engler [2:422]

B3 Eskişehir: Sündiken Da., Tayacilar, 1000 m, 20 v 1973, *Ekim* 846.

Streamsides on N slopes in the Sakarya valley.

## LINACEAE

*Linum hirsutum* L. subsp. *pseudoanatolicum* Davis [2:440]

C8 Mardin: near Mardin, cornfields, weed, 600 m, *M. Zel* 970.

## GERANIACEAE

*Geranium robertianum* L. [2:458]

B3 Eskişehir: Sündiken Da., Çatacik, 30 v 1970, *Ekim* 494.

Shady and moist places in forests.

*G. macrostylum* Boiss. [2:466]

B3 Eskişehir: Sündiken Da., Belce alani, 1635 m, 11 vi 1971, *Ekim* 497.

*Pelargonium endlicherianum* Fenzl [2:487]

B3 Eskişehir: Sündiken Da., Mihaliçcik, Akişik koyu, 1350 m, 4 vii 1970, *Ekim* 490.

## ACERACEAE

*Acer platanoides* L. [2:512]

B3 Eskişehir: Sündiken Da., mixed forest, 1000 m, *Ekim* 302 (Det. F. Yaltirik).

## ANACARDIACEAE

*Rhus coriaria* L. [2:543]

A3 Eskişehir: Sündiken Da., Sakarya valley, 350 m, 18 v 1971, *Ekim* 306.

*Pistacia terebinthus* L. subsp. *palaestina* [2:548]

B3 Eskişehir: Boz Da., 1200 m, 25 vi 1971, *Ekim* 307.

## CELASTRACEAE

*Euonymus europaeus* L. [2:551]

B3 Eskişehir: Sündiken Da., Kocacukur, 10 km E of Başören, 1000 m, 22 v 1971, *Ekim* 371.

Growing with this species in moist deciduous forest and streamsides was *E. latifolius*.

## LEGUMINOSAE

*Sophora alopecuroides* L. var. *alopecuroides* [3:11]

B8 Diyarbakir: near Diyarbakir, cornfields, weed, 700 m, *M. Zel* 1007 (det. D. F. Chamberlain).



**Chamaecytisus pygmaeus** (Willd.) Rothm. [3:20]

B3 Eskişehir: Sündiken Da., Mihaliçcik, Yagarslan, 1500 m, 6 vi 1970, *Ekim* 542.

**Genista lydia** Boiss. subsp. *lydia* [3:26]

B3 Eskişehir: Sündiken Da., Atalan tekke, steppe, 1000 m, 21 vi 1974, *Ekim* 912.

**Astragalus trojanus** Stev. [3:164]

A3 Eskişehir: Sündiken Da., Laçın, 350 m, 21 vi 1974, *Ekim* 889.

In *Pinus brutia* forest.

**A. stereocalyx** Bornm. [3:181]

B3 Eskişehir: NW of Mihaliçcik, 1400 m, 5 vi 1971, *Ekim* 552.

Although this is not a new square record, my material is much larger flowered than Bornmüller's type. Its differential features are: pedicel c. 1–2 cm; standard 40 mm; wings 35 mm; carina 28 mm; calyx 20–22 mm and purplish; the ovary and legume are always pilose, not glabrous as previously described.

**A. xylobasis** Freyn & Bornm. var. *angustus* (Freyn & Sint.) Freyn & Bornm. [3:210]

B3 Eskişehir: Sündiken Da., Küplü, 700 m, 5 vi 1971, *Ekim* 588.

**Cicer anatolicum** Alef. [3:270]

A3 Eskişehir: Sündiken Da., SW of Gökçekaya dam, 500 m, 20 v 1971, *Ekim* 556.

The altitude here is apparently lower than elsewhere in Anatolia.

**Vicia hirsuta** (L.) S. F. Gray [3:301]

B3 Eskişehir: Sündiken Da., Tayacilar, Soğuksu, 1000 m, 23 v 1973, *Ekim* 572.

**V. truncatula** Fischer ex Bieb. [3:303]

B3 Eskişehir: Sündiken Da., Kocacukur, in deciduous forest, 1000–1200 m, 22 vi 1971, *Ekim* 1210.

**V. sericocarpa** Fenzl var. *sericocarpa* [3:312]

B3 Eskişehir: Sündiken Da., NW of Mihaliçcik, Bospinar, 1400 m, 8 vi 1971, *Ekim* 566.

**V. grandiflora** Scop. var. *grandiflora* [3:316]

A3 Eskişehir: Sündiken Da., Mayislar, Sarıcam deresi, 500 m, 4 vi 1971, *Ekim* 605.

**V. lathyroides** L. [3:317]

A3 and B3 Eskişehir: Sündiken Da., 400–1000 m, 22 vi 1974, *Ekim* 885.

Common in the *Pinus brutia* and *Quercus* forests.

**V. narbonensis** L. var. *narbonensis* [3:321]

A3/B3 Eskişehir: Sündiken Da., Tayacilar, 700 m, 18 v 1971, *Ekim* 603.

**Lathyrus aureus** (Stev.) Brandza [3:333]

B3 Eskişehir: Sündiken Da., Kocacukur, 1000–1300 m, 26 vi 1971, *Ekim* 606.

A characteristic plant for *Quercus* forest in this area.

**L. pratensis** L. [3:346]

B3 Eskişehir: Sündiken Da., S of Sorkun, 1300 m, 24 vii 1971, *Ekim* 615.



*L. laxiflorus* (Desf.) O. Kuntze subsp. *laxiflorus* [3:347]  
B3 Eskişehir: Sündiken Da., 1000–1700 m, 15 vi 1971, *Ekim* 616.

Common in the *Pinus nigra* and *P. sylvestris* forests.

*L. inconspicuus* L. [3:354]

B7 Diyarbakir: Ergani, cornfields, weed, 700 m, 16 v 1966, *M. Zel* 1062.

*L. nissolia* L. [3:366]

A3 Eskişehir: Sündiken Da., Gumele dere, 600 m, 20 v 1971, *Ekim* 618.

*Pisum sativum* L. subsp. *elatus* (Bieb.) Aschers. & Graebn. var. *brevipedunculatum* Davis & Meikle [3:371]

A3 and B3 Eskişehir: Sündiken Da., N of Başörem, 750–1000 m, 20 v 1971, *Ekim* 598.

*Trifolium hybridum* L. var. *hybridum* [3:395]

B3 Eskişehir: Sündiken Da., Guvem pasture, 1250 m, 30 vi 1971, *Ekim* 577.

The calyx measurements given in the *Flora* are incorrectly given as 7–9 mm; they should read c. 3 mm.

*T. hybridum* L. var. *anatolicum* (Boiss.) Boiss. [3:395]

B3 Eskişehir: Sündiken Da., W of Mihaliçcik, 1550 m, 4 vii 1970, *Ekim* 564.

*T. nigrescens* Viv. subsp. *petrisavii* (Clem.) Holmboe [3:396]

B3 Eskişehir: Sündiken Da., 1000 m, 5 vi 1971, *Ekim* 580.

*T. speciosum* Willd. [3:398]

B3 Eskişehir: Sündiken Da., damaged forest, 1000 m, 22 vi 1971, *Ekim* 578.

*T. campestre* Schreb. [3:404]

B3 Eskişehir: Sündiken Da., Oyuk Alan, 1000–1500 m, 1 vii 1970, *Ekim* 557.

*T. glanduliferum* Boiss. var. *glanduliferum* [3:414]

A3 Eskişehir: Sündiken Da., Gök Tepe, 1200 m, 19 vi 1973, *Ekim* 579.

*T. caudatum* Boiss. [3:421]

B3 Eskişehir: Sündiken Da., Mihaliçcik, Bespinar, 1500 m, 3 vii 1970, *Ekim* 583.

This is not a new record for the square because although in the *Flora of Turkey* Bornmüller 1899:4319 is cited as being in C3, it does in fact belong to B3.

*T. pannonicum* Jacq. subsp. *elongatum* (Willd.) Zoh. [3:422]

B3 Eskişehir: Sündiken Da., common, 600–1500 m, 4 vi 1971, *Ekim* 561.

*T. alpestre* L. [3:422]

B3 Eskişehir: Turkmen Da., 1400–1600 m, 12 vi 1971, *Ekim* 565.

*T. scabrum* L. [3:428]

B3 Eskişehir: Sündiken Da., Tayacilar, Avariçeşme, 1300 m, 1 vii 1970, *Ekim* 582.

*Melilotus taurica* (Bieb.) Ser. [3:451]

A3 Eskişehir: Sündiken Da., Sakarya valley, 550 m, 18 v 1971, *Ekim* 608.

*Trigonella spicata* Sibth. & Sm. [3:477]

A3 Eskişehir: Sündiken Da., Kusbasli Dere, 550 m, 18 v 1971, *Ekim* 1022.

*Hymenocarpus circinnatus* (L.) Savi [3:533]

C8 Diyarbakir, near Diyarbakir, cornfields, weed, 1966, *M. Zel* 1049.



**Coronilla varia** L. [3:543]

B3 Eskişehir: Sündiken Da., Karakütük, 1700 m, 30 v 1970, *Ekim* 595.

**Onobrychis caput-galli** (L.) Lam. [3:565]

A3 Eskişehir: Sündiken Da., Sakarya valley, Karaoğlan, 500 m, 3 vi 1971, *Ekim* 587.

**Alhagi pseudalhagi** (Bieb.) Desv. [3:596]

B3 Eskişehir: Mihaliçcik, roadsides, 800 m, *Ekim* 555.

## ROSACEAE

**Cerasus prostrata** (Lab.) Ser. var. **prostrata** [4:13]

B3 Eskişehir: Sündiken Da., steppe, 1000 m, 22 vi 1971, *Ekim* 789.

**Rubus canescens** DC. var. **glabratus** (Godron) Davis & Meikle [4:36]

B3 Eskişehir: Sündiken Da., Guvem pasture, 1300 m, 30 vi 1970, *Ekim* 778.

**R. hirtus** Waldst. & Kit. [4:47]

B3 Eskişehir: Sündiken Da., *Pinus nigra* and *P. sylvestris* forest, 1200–1700 m, 10 vii 1971, *Ekim* 784.

**Potentilla rupestris** L. [4:47]

B3 Eskişehir: Sündiken Da., K. Aliç Alani, 1500 m, 20 vi 1973, *Ekim* 795.

**P. argentea** L. [4:49]

B3 Eskişehir: Sündiken Da., Geriz Alani, 1400 m, 30 vi 1973, *Ekim* 783.

**P. inclinata** Vill. [4:50]

A3 Eskişehir: Sündiken Da., Alpagut, 350 m, 3 vi 1971, *Ekim* 783/A.

B3 Eskişehir: Sündiken Da., Guvem pasture, 1300 m, 30 vi 1970, *Ekim* 783.

**Fragaria vesca** L. [4:69]

B3 Eskişehir: Sündiken Da., Karakütük, 1550 m, 30 vi 1970, *Ekim* 775.

**Geum urbanum** L. [4:72]

B3 Eskişehir: Sündiken Da., common in forest, *Ekim* 774.

**Alchemilla mollis** (Buser) Rothm. [4:97]

B3 Eskişehir: Sündiken Da., Mihaliçcik, Sorkun, 1300 m, 4 vii 1970, *Ekim* 776.

**Rosa foetida** L. [4:112]

B3 Eskişehir: Sündiken Da., NW of Mihaliçcik, Kuvvettaşı, 1500 m, 6 vii 1970, *Ekim* 779.

**Crataegus curvisepala** Lindman [4:144]

B3 Eskişehir: Sündiken Da., Yarımca, 1300 m, 12 vi 1971, *Ekim* 768.

**Sorbus aucuparia** L. [4:149]

B3 Eskişehir: Sündiken Da., N of Mihaliçcik, 1300 m, *Ekim* 793.

**Malus sylvestris** Miller subsp. **orientalis** var. **orientalis** [4:158]

B3 Eskişehir: Sündiken Da., Bahçekuyu, 1450 m, 22 v 1971, *Ekim* 769.



## PUNICACEAE

*Punica granatum* L. [4:173]

A3 Eskişehir: Sakarya valley, Mayıslar, 300-400 m, 4 vi 1971, *Ekim* 728.  
Thoroughly naturalized here if not wild.

## ONAGRACEAE

*Epilobium angustifolium* L. [4:185]

B3 Eskişehir: Sündiken Da., Karakütük, 1550 m, 30 vi 1970, *Ekim* 687.

*E. lanceolatum* Seb. & Mauri [4:188]

B3 Eskişehir: Sündiken Da., Karakütük, 1600 m, 30 vi 1970, *Ekim* 686.

## CRASSULACEAE

*Umbilicus erectus* DC. [4:211]

A3 Eskişehir: Sündiken Da., Gümele, rocks, 500 m, 20 v 1971, *Ekim* 385.

## UMBELLIFERAE

*Lagoecia cuminoides* L. [4:304]

A3 Eskişehir: Sakarya valley, Alpagut, 350 m, 26 vi 1974, *Ekim* 852.

*Chaerophyllum byzantinum* Boiss. [4:312]

B3 Eskişehir: Sündiken Da., N. of Tayacilar, 800 m, 20 vi 1973, *Ekim* 854.

*C. bulbosum* L. [4:315]

B3 Eskişehir: Sündiken Da., Guvem pasture, 1300 m, 26 vi 1974, *Ekim* 856  
(det. J. Lamond).

*Grammosciadium daucooides* DC. [4:319]

A3 Eskişehir: Sündiken Da., Göktepe, 1300 m, 19 vi 1973, *Ekim* 856.

A very characteristic plant of *Quercus* forest.

*Scandix pecten-veneris* L. [4:328]

B3 Eskişehir: Sündiken Da., segetal, *Ekim* 866. C8 Diyarbakir: cornfields, weed, *M. Zel* 1089.

*Smyrniurn creticum* Miller [4:339]

A3 and B3 Eskişehir: Sündiken Da., 1000 m, 10 vi 1973, *Ekim* 859.

In *Quercus* forest and amongst bushes.

*Pimpinella anthriscoides* Boiss. var. *anthriscoides* [4:363]

B3 Eskişehir: Sündiken Da., Karakütük, 1300 m, 30 vi 1970, *Ekim* 872.

*Seseli tortuosum* L. [4:371]

A3 Eskişehir: Sündiken Da., Mayıslar, 500 m, 13 ix 1971, *Ekim* 863.

*Oenanthe pimpinelloides* L. ? [4:373]

B3 Eskişehir: Sündiken Da., Guvem pasture, 1250 m, 30 vi 1970, *Ekim* 860.  
(det. I. C. Hedge).

This specimen has exceptionally long rays (5-5.5 cm instead of 2.5 cm).  
Tubers are needed to confirm the identification.



**Ferulago galbanifera** (Miller) W. Koch [4:455]

B<sub>3</sub> Eskişehir: Sündiken Da., *Quercus* forest, 1000 m, 20 vi 1970, *Ekim* 847.  
(det. H. Peşmen).

#### CORNACEAE

**Cornus mas** L. [4:541]

B<sub>3</sub> Eskişehir: Sündiken Da., Çatacik, stream, 1300 m, 22 vi 1973, *Ekim* 383.

#### CAPRIFOLIACEAE

**Sambucus nigra** L. [4:542]

B<sub>3</sub> Eskişehir: Sündiken Da., Çatacik, 1420 m, I vii 1970, *Ekim* 334.

**Lonicera etrusca** Savi var. *etrusca* [4:548]

B<sub>3</sub> Eskişehir: Sündiken Da., N of Mihaliççik, Namazlar, 1550 m, 4 vii 1970,  
*Ekim* 333.

#### VALERIANACEAE

**Centranthus calcitrapa** (L.) Dufr. [4:559]

B<sub>3</sub> Eskişehir: Sündiken Da., stream sides, 1000 m, 18 v 1970, *Ekim* 882.

**Valerianella costata** (Stev.) Betcke [4:571]

B<sub>3</sub> Eskişehir: Sündiken Da., steppe and as a segetal, 1000 m, 12 vi 1970,  
*Ekim* 878.

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